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ABSTRACT

This study was a follow-up to one that gathered baseline data on aspects of Grade 1 as part of the on-going Statewide Texas Educational Progress Study (STEPS). While the Grade 1 study was limited to teachers' perceptions of student performance, this follow-up focused on factors most related to actual end-of-year student status. The purposes of the follow-up study were to examine judgments of surveyed Grade 1 teachers regarding their students' promotion status in light of the students' actual promotion, placement, or retention and to explore relationships among system resources (contexts), student and school characteristics (inputs), and school and classroom practices (processes) that are associated with promotion to Grade 2. Some highlights from the findings are: (1) nearly all students were promoted to, or placed in, Grade 2, a higher percentage than projected by Grade 1 teachers; (2) teachers' assessments of students' readiness and instructional levels were strongly related to students' promotion; (3) students judged to have mastered at least half of the essential Grade 1 elements were much more likely to be promoted than students who had mastered fewer than half of the elements; (4) student attendance was positively related to promotion; (5) students' self-help skills were positively related to promotion; (6) students judged at or above grade level in oral reading proficiency, reading comprehension, and mathematics were more likely to be promoted than students performing below grade level; and (7) relationships between promotion and teachers' use of several instructional techniques yielded conflicting results. The appendix includes a technical description of the data analysis. (Contains 14 references.) (KB)

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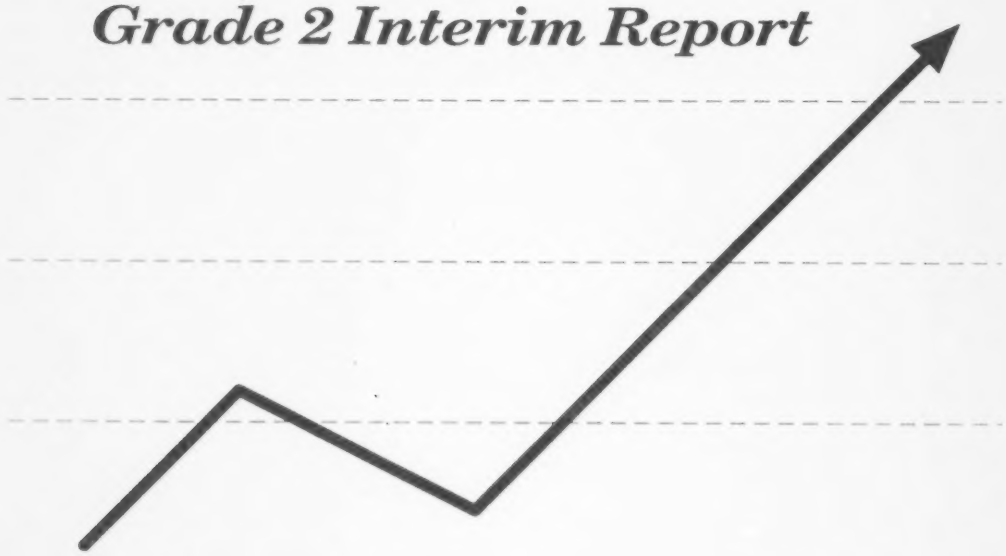
Systemwide Elementary Reform (SER)

Grade 2 Interim Report



STATEWIDE TEXAS EDUCATIONAL PROGRESS STUDY

REPORT NO. 5 **AUGUST 1997**

PS 023003

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Systemwide Elementary Reform (SER)

Grade 2 Interim Report

STATEWIDE TEXAS EDUCATIONAL PROGRESS STUDY

REPORT NO. 5 AUGUST 1997

SYSTEMWIDE ELEMENTARY REFORM (SER)
GRADE 2 INTERIM REPORT

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SYSTEMWIDE ELEMENTARY REFORM (SER)
GRADE 2 INTERIM REPORT

EXECUTIVE SUMMARY

Systemwide elementary reform (SER) — grade 2 interim report is a follow-up to *First steps in school: An examination of grade 1 in Texas public schools* (Texas Education Agency, 1997a, 1997b). The Grade 1 study was limited to teachers' perceptions of student performance, so follow-up studies based on actual outcomes are needed to confirm early findings. This interim report focuses on factors (based on PEIMS and survey data) that are most related to *actual* end-of-year status, in terms of promotion to or placement in Grade 2 or retention in Grade 1. In-depth follow-up of these students is planned for 1997-98, when most are expected to be in the third grade and taking the Texas Assessment of Academic Skills (TAAS) tests for the first time.

The purposes of this interim study are 1) to examine the *judgments* of the surveyed Grade 1 teachers regarding the promotion status of their students in light of the students' *actual* promotion, placement, or retention (according to fall 1996 PEIMS data) and 2) to explore relationships among system resources (contexts), student and school characteristics (inputs), and school and classroom practices (processes) that appear to be associated with student promotion to Grade 2. Highlights from the findings are given below.

- Nearly all students (93.4%) were promoted to, or placed in, Grade 2 — a higher percentage than projected by their Grade 1 teachers.
- Teachers' assessments of students' readiness and instructional levels were strongly related to students' promotion to Grade 2.
- Students judged to have mastered half or more of the essential elements for Grade 1 were much more likely to be promoted to Grade 2 than students who were judged to have mastered fewer than half of the essential elements.
- The better a student's attendance, the more likely he or she would be promoted to Grade 2.
- The students who were rated by their teachers as demonstrating self-help skills most often, also were most often promoted to or placed in Grade 2 (99.3%).

- Students judged to be performing at or above grade level in oral reading proficiency, reading comprehension, and mathematics were more likely to be promoted than those students judged to be performing below grade level.

- Students who had participated in Early Childhood Education (ECE) or Prekindergarten (PreK) were promoted to Grade 2 about as often as their peers who had not been in these programs. This indicates that the programs likely had *positive* effects, since both are designed for students who are considered to be in some way at risk of school failure.

- Generally, students identified as economically disadvantaged, at risk, or limited English proficient (LEP), or as needing special education, bilingual education, or English as a second language instruction were slightly less likely than other first graders to be promoted.

- Students who were never sent outside the classroom for discipline (81% of the sample) had higher promotion rates than students who were referred for discipline, especially those who were referred for discipline three times or more.

- In some cases, differences in district type (e.g., *major urban* versus *rural*) and 1995 campus accountability rating (e.g., *Exemplary* versus *Low Performing*) affected the way promotion rates related to some of the other factors just identified, such as student attendance or teachers' assessments of students' readiness. At least to some degree, these differences may be due to higher concentrations of students with certain characteristics (e.g., LEP, economically disadvantaged) in particular district or campus types. Knowing that these contexts matter reinforces the use of school characteristics, in order of prominence, in the construction of campus Comparable Improvement groups for the accountability system.

- Analyses of the relationships between actual promotion and teachers' use of several instructional practices (e.g., enrichment, varying instructional modalities) produced some conflicting results. For example, promotion rates were higher when teachers reported using enrichment activities frequently. However, the odds of a student being promoted, other things kept equal, were the greatest when teachers reported infrequent use of enrichment activities. This apparent contradiction suggests that (a) teachers selectively and appropriately target instructional strategies to the specific needs of their learners, and (b) that class composition matters a great deal when trying to gauge the benefit of using any one instructional technique.

The results of the present study serve to highlight those contextual, input, and process measures that warrant further exploration at Grade 3, and to confirm some of the results already reported at the end of Grade 1 (TEA, 1997a, 1997b). Successive years of promotion/retention data, combined with an examination of TAAS data, should confirm by 1998-99 those combinations of individual level, classroom level, and school/district level features associated with optimal learning in Texas primary grades.

INTRODUCTION

Systemwide elementary reform (SER) — grade 2 interim report is a follow-up to *First steps in school: An examination of grade 1 in Texas public schools* (Texas Education Agency, 1997a, 1997b), that gathered baseline data on aspects of Grade 1 as part of the on-going Statewide Texas Educational Progress Study (STEPS). The SER/Grade 1 project was intended to respond to a number of informational needs identified in research-based literature and in Texas Education Agency (TEA) policy regarding accountability for performance and systemwide improvement by focusing on the primary grade levels targeted for reform under Academics 2000 (TEA, 1995a).

The SER/Grade 1 study included accessing the existing knowledge bases pertaining to Grade 1 (both published literature and the agency's Public Education Information Management System, or PEIMS) and collecting original survey data from a representative sample of Grade 1 teachers. In the spring of 1996, PEIMS and survey data were compiled on over 9,000 first-grade students on 99 campuses in 85 districts. In addition to collecting information from teachers in the sample about their instructional practices, teachers were asked to complete a survey form (with parental consent when local policies so required) on each of their students about the child's beginning readiness for school, grade-level performance, mastery of the essential elements, and overall progress in school (TEA, 1997a, 1997b).

The SER/Grade 1 study was limited to teachers' *perceptions* of student performance, so follow-up studies based on actual outcomes are needed to confirm early findings. This interim report focuses on factors (based on PEIMS and survey data) most related to *actual* end-of-year status, in terms of promotion to or placement in Grade 2, or retention in Grade 1. In-depth follow-up of these students is planned for 1997-98, when most are expected to be in the third grade and taking the Texas Assessment of Academic Skills (TAAS) tests for the first time.

Review of Existing Policy and Research

A thorough review of literature relevant to Grade 1 may be found in *First steps in school: An examination of grade 1 in Texas public schools — technical report* (TEA, 1997b). The review focuses on general demographics of first graders nationwide and in Texas, research on how first graders learn and grow, strategies on how to best promote the success of first graders, and assessment appropriate for first graders.

The 1996 Texas Education Code (TEC) §28.021(a) states "A student may be promoted only on the basis of academic achievement or demonstrated proficiency of the subject matter of the course or grade level." The language regarding demonstrated

proficiency is new. When the 74th Texas Legislature passed Senate Bill 1, changes also were made in the Texas Administrative Code (TAC). Previously, a number of rules addressed grade level promotion in public education. For example, former TEC §21.721 (TEC, 1994) stated that districts may not grant social promotions. A summary of the former policies that prescribed promotion decisions can be found in the *1994-95 Report on grade level retention* (TEA, 1996a). Presently, any rule that specified which students should or should not be promoted was deleted, such that there are currently no rules with promotion specifications. While not prescribing promotion decisions, there are a number of programs that were created to reduce retention (Retention Reduction Grants, Optional Extended Year Program, goals under Academics 2000, etc.). Retention rates and their consequences also are reported regularly by TEA (AEIS; agency strategic planning; at-risk criteria, etc.). The TEA report on retention (TEA, 1996a) also includes descriptions of several of the currently authorized retention reduction programs with their reporting requirements.

Purpose and Description of the Study

The purposes of the SER/Grade 2 study are 1) to examine the *judgments* of the surveyed Grade 1 teachers regarding the promotion status of their students relative to the students' *actual* promotion, placement, or retention (according to fall 1996 PEIMS data), and 2) to explore relationships among student and school characteristics, school and classroom practices, and system resources that appear to be associated with student promotion to Grade 2. This study was exclusively statistical in nature: no new non-PEIMS data were collected for this interim report. Rather, the data collected from first-grade teachers in 1995-96 were re-analyzed in light of fall 1996 PEIMS data submissions from the participating schools and districts.

Research Questions

Table 1 presents the research questions that guided the analyses. The questions draw from both the overarching evaluative approach of the study — examining the interplay among educational *contexts*, such as district type; *inputs*, such as resources or constraints bearing upon education; *processes*, such as teaching and learning practices, participation in learning, and so on; and *products*, or children's academic performance — as well as from the preliminary results of the study, presented in the *First steps in school* report (TEA, 1997b). For example, that research found meaningful relationships between school attendance and student learning in Grade 1, as judged by classroom teachers. Consequently, attendance is examined again in this interim report to check its possible relationship to actual student promotion to Grade 2. This likely will continue to be examined in future components of the STEPS project.

Table 1. Research Questions

Research Questions*
1. Is there a relationship between the percentage of economically disadvantaged students at the student's campus and actual first-grade student end-of-year advancement? **
2. Is prior participation in early childhood programs (Prekindergarten, Early Childhood Education) positively related to actual end-of-year advancement?
3. Are teacher perceptions of student readiness to learn directly related to actual end-of-year advancement?
4. Are student attendance rates directly related to actual end-of-year advancement?
5. Are teacher ratings of student self-help skills directly related to actual end-of-year advancement?
6. Are teacher ratings of student instructional levels directly related to actual end-of-year advancement?
7. Is student identification as economically disadvantaged, at risk, and/or limited English proficient (LEP), or participation in special education and/or bilingual or English as a second language (ESL) programs, related to actual end-of-year advancement?
8. Is the number of times a student is referred for discipline related to actual end-of-year advancement?
9. Is student suspension status related to actual end-of-year advancement?
10. Is student placement in an alternative education setting related to actual end-of-year advancement?
11. For students placed in an alternative setting, is the type of alternative setting related to actual end-of-year advancement?
12. For students placed in an alternative setting, is the amount of time spent in an alternative setting related to actual end-of-year advancement?
13. Are teacher ratings of student mastery level of essential elements directly related to actual end-of-year advancement?
14. Are teacher judgments of students' promotion status confirmed by students' actual end-of-year advancement?
15. What combinations of school attributes, instructional practices (such as frequency of "pullouts," teacher use of varying modalities in instruction, use of learning centers, etc.), and materials are most predictive of actual end-of-year advancement?

* For all 15 questions, the possible moderating influences of (a) district type, (b) 1995 campus accountability rating, and (c) academic calendar (year-round or not) were considered.

** The term "advancement" is used throughout this text to include both promotion and placement into Grade 2 following the students' first-grade year in school, per fall 1996 PEIMS data.

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In Table 2 are the school characteristics and practices, teacher characteristics, classroom practices, and student characteristics and behaviors that comprise the contexts, inputs, and processes used to examine the academic result: actual promotion or placement into Grade 2 immediately following Grade 1 in 1995-96.

Table 2. Key Contexts, Inputs, and Processes at First Grade Examined for Relationships to Advancement to Grade 2

District/Campus Contexts	Inputs (Resources and Constraints)	Instructional Processes
• District type (urbanicity)	• Percent of students on campus identified as economically disadvantaged, at risk, or LEP	• Student participation in Early Childhood Education (ECE) or Prekindergarten (PreK)
• Campus turnover rate	• Years of teaching experience	• Student readiness for Grade 1
• 1995 campus accountability rating	• Teacher versatility *	• Student attendance rate
• Campus calendar (year-round or not)	• District per-pupil expenditures	• Student social behaviors
• Classroom pupil:teacher ratio		• Student self-help skills
• Length of Grade 1 teachers' planning period		• Frequency of student discipline
		• Referral to an alternative setting
		• Student instructional level
		• Student participation in Special Education, Bilingual, ESL, and Gifted and Talented Programs
		• "Pullouts" from the classroom
		• Varying teaching modalities
		• Use of learning centers
		• Use of enrichment activities
		• Sufficiency of materials
		• Student essential elements mastery
		• Teacher judgment regarding promotion

* This index was constructed from the Grade 1 survey data to reflect the breadth or range of frequently used instructional strategies reported by teachers. For details, see *First steps in school: An examination of grade 1 in Texas public schools – technical report* (TEA, 1997b).

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Methodology

Data sources. The study began with the 9,489 first-grade students selected for the SER/Grade 1 study. Of those, it was possible to match 9,110 records with the fall 1996 PEIMS data. "End-of-year advancement status," based on PEIMS end-of-year data submission #3, was available for 8,220 of the 9,110 students (from the PEIMS data collected at the end of the 1995-96 school year). Finally, 137 students whose end-of-year advancement status was undetermined were excluded from the analyses. Typically these were students whose status would be determined after the completion of summer school, or students who left their school districts before the end of the school year. Data on the remaining 8,083 students were analyzed for this study.

Data analyses. The study explored relationships among individual level, classroom level, and school/district level features (see Table 2) with student promotion or placement in Grade 2. Items of interest were chosen from original survey data and PEIMS data to include information about school characteristics, teacher and classroom attributes or practices, and student characteristics and behaviors. The specific analysis technique used to answer each research question is included in Table A-1 in Appendix A. (A more complete description and discussion of rationale and approaches to logistic regression analyses are presented in the Appendix.)

FINDINGS

This section of the report is organized by the research questions, which are set apart from the text in boxes that also contain relevant summary responses for each. Following each question-and-answer box is a paragraph description of the relevant results. When *district types* or the prior year's *1995 campus accountability ratings* moderated these results, the reader will find labeled subparagraphs explaining the particular variations; otherwise they are not mentioned. Schools on year-round calendars in the study (there were only five) are discussed separately, because data availability limited these analyses to a bare minimum and, consequently, all of those results need to be viewed as tentative.

> ***Research Question 1:*** Is there a relationship between the percentage of economically disadvantaged students at the student's campus and actual first grade end-of-year advancement?
>
> ***Answer:*** No.

No meaningful direct relationship between these was observed.

> ***Research Question 2:*** Is prior participation in early childhood programs (Prekindergarten and Early Childhood Education) positively related to actual end-of-year advancement?
>
> ***Answer:*** Likely.

There were no clear differences in promotion rates for students who did or did not participate in Early Childhood Education (ECE) or Prekindergarten (PreK). Similarity of results likely means that these programs had a *positive* effect, since both are designed for students who are considered to be in some way at risk of school failure.

District type. There were some clear differences in promotion percentages for participants and non-participants when examined by district type. *Major urban* districts and districts in *independent towns* promoted the highest percentages of students who were *not* participants in Early Childhood Education (98.7%). *Rural* districts had the highest percentage of former ECE participants who were promoted (5.1%). *Rural* districts promoted the highest percentage of students

without PreK experience (89.8%). *Major urban* districts promoted a much higher percentage of students with PreK experience (43.0%) than other districts.

1995 campus accountability rating. Campuses rated as *Exemplary* promoted the highest percentage of students without Prekindergarten experience (88.6%). *Low Performing* campuses promoted the highest percentage of former PreK participants (32.6%).

Research Question 3: Are teacher perceptions of student readiness to learn directly related to actual end-of-year advancement?

Answer: Yes.

Among students who were promoted, 71.8 percent had been judged by their teachers to be ready upon entering Grade 1. Among students retained in Grade 1, 89.6 percent had been judged as *not* ready for school upon entering Grade 1.

District type. Other central city suburban districts had the highest percentage of students judged to be ready for school who were promoted (77.3%). Districts in *independent towns* had the highest percentage of students judged *not* to be ready for school who were promoted (37.3%).

1995 campus accountability rating. Schools rated as *Exemplary* had the highest percentage of students judged to be ready for school who were promoted (80.9%). Schools rated as *Low Performing* had the highest percentage of students judged *not* to be ready for school who were promoted (39.4%).

Research Question 4: Are student attendance rates directly related to actual end-of-year advancement?

Answer: Marginally.

A small, positive relationship ($r = .13$) between student attendance rate and end-of-year advancement was found. As attendance increased, so did the promotion rate, albeit only slightly.

District type. Across district types, variation existed in the strength of the relationship between attendance rates and promotion. For *major urban* and *other central city suburban* districts the relationships were strongest ($r = .22$ to .24). The relationships were not significant for districts in *independent towns* and *non-metropolitan fast growing* districts.

1995 campus accountability rating. Across the four campus ratings, very similar correlations were observed between attendance rates and promotion, with the relationship strongest in *Exemplary* schools.

Research Question 5: Are teacher ratings of student self-help skills directly related to actual end-of-year advancement?

Answer: Yes.

Students rated by their teachers as most frequently demonstrating self-help skills also were most often promoted to, or placed in, Grade 2 (99.3%). Students who were rated by their teachers as demonstrating self-help skills least often were least likely to be promoted to Grade 2 (75.6%), and most likely to be retained in Grade 1 (24.4%).

District type. Variation appeared across district types and whether students always, often, sometimes, seldom, or never showed self-help skills. *Non-metropolitan stable* districts promoted the highest percentage of students rated as *always* showing self-help skills (37.9%). *Major urban* and *other central city suburban* districts had the highest percentages of students (34.3% and 34.4%, respectively) rated as *often* showing self-help skills who also were promoted to, or placed in, Grade 2. Districts in *independent towns* promoted the highest percentages of students rated as sometimes (25.3%) or seldom (12.7%) showing self-help skills. *Non-metropolitan fast growing* districts promoted the highest percentage of students rated as never showing self-help skills (5.0%).

1995 campus accountability rating. Schools rated as *Exemplary* had the highest percentages of students promoted who were rated as always (39.0%) or often (34.1%) showing self-help skills. Schools rated as *Low Performing* promoted the highest percentages of students who were rated as sometimes (24.1%), seldom (16.0%), or never (3.3%) showing self-help skills.

Research Question 6: Are teacher ratings of student instructional levels related to actual end-of-year advancement?

Answer: Yes.

Students judged to be performing at or above grade level in oral reading proficiency, reading comprehension, and mathematics were more likely to be promoted than those students judged to be performing below grade level. Across the three areas, from 77.9 to 86.7 percent of promoted students had been rated as working at or above

grade level. From 74.4 to 87.1 percent of students who were *not* promoted had been rated as working *below* grade level. These results tentatively confirm teacher judgments made in Grade 1 (TEA, 1997a, 1997b).

1995 campus accountability rating. Schools rated *Exemplary* had the highest percentages of students functioning at or above grade level (in the judgment of their teachers) who also were promoted to Grade 2 (81.2% to 89.5%). Schools rated *Low Performing* had the highest percentages of students functioning *below* grade level promoted to Grade 2 (18.4% to 32.2%). The only exception was in reading comprehension, where *Recognized* schools had a slightly higher percentage of "on grade level" students (81.6%) promoted than *Exemplary* schools.

Research Question 7: Is student identification as economically disadvantaged, at risk, and/or limited English proficient (LEP), or participation in special education and/or bilingual or English as a second language (ESL) programs, related to actual end-of-year advancement?

Answer: Varies with characteristic or program.

Of the students who were retained in Grade 1, 74.3 percent were identified as economically disadvantaged, and 52.1 percent were identified as at risk. Being identified as LEP, however, made very little difference in promotion status; 95.4 percent of non-LEP students and 93.8 percent of LEP students were promoted.

District type. *Major suburban* districts promoted the highest percentage of non-economically disadvantaged students (68.4%). *Major urban* districts promoted the highest percentage of economically disadvantaged first graders (80.9%). *Non-metropolitan fast growing* districts promoted the highest percentages of students who were neither identified as at risk (82.5%) nor LEP (93.3%). *Major urban* districts promoted the highest percentages of students identified as at-risk (41.5%) or LEP (39.8%).

1995 campus accountability rating. As might be expected, campuses rated *Exemplary* promoted the smallest percentage of economically disadvantaged students. Campuses rated *Low Performing* promoted the highest percentage of economically disadvantaged students (63.0%). Campuses rated *Recognized* promoted the highest percentage of students who were *not* at risk (76.9%). Campuses rated *Low Performing* promoted the most at-risk students on a percentage basis (34.5%). *Recognized* campuses promoted the most non-LEP students (89.1%). *Acceptable* campuses promoted the highest percentage of identified LEP students (26.0%). These differences may partially reflect higher or lower concentrations of some student groups on campuses with different accountability ratings (e.g., 79.6% of all identified LEP students were on campuses with a 1995 accountability rating of *Acceptable).*

Special education program participation. Somewhat fewer special education participants (92.3%) were promoted than non-participants (95.3%).

District type. Major urban districts promoted the highest percentage of students *not* served in special education programs (94.9%) and the lowest percentage of students served by special education programs (5.1%). *Rural* districts promoted the highest percentage of special education participants (16.1%) and the lowest percentage of students not receiving special education services (83.9%).

1995 campus accountability rating. Low Performing campuses promoted the lowest percentage of students who received special education services (4.5%). *Recognized* campuses promoted the highest percentage of students participating in special education programs (10.5% out of all students promoted in these schools).

Bilingual/ESL program participation. Promotion rates did not differ overall when students were served by bilingual programs. However, students who participated in ESL programs had a slightly lower rate of promotion (91.9%) than students who were not ESL participants (95.2%).

District type. Of the districts providing bilingual services, districts in *independent towns* promoted the fewest bilingual program participants. *Major urban* districts promoted the highest percentage of students in bilingual programs (31.8%). Of the districts that had 20 or more students receiving ESL instruction, *rural* districts promoted the highest percentage of participating students (9.7%).

1995 campus accountability rating. Recognized schools promoted the fewest students participating in bilingual programs (92.7%). *Acceptable* campuses promoted the highest percentage of students participating in bilingual programs (19.5%). Promotion rates did not vary with accountability ratings for students participating in ESL programs.

Research Question 8: Is the number of times a student is referred for discipline related to actual end-of-year advancement?

Answer: Yes.

Students who were never disciplined (81.1% of the sample) had higher promotion rates than students who were disciplined, especially those who were disciplined three times or more. Of students who were never disciplined, 95.7 percent were promoted. For students who were disciplined three times, 88.7 percent were promoted, and 11.3 percent were retained. Among students disciplined four or more times, 90.0 percent were promoted, and ten percent were retained.

District type. Other central city districts had the highest percentage of students promoted who were never disciplined (87.4%). *Non-metropolitan fast growing* districts retained in Grade 1 the highest percentage of students who were disciplined four or more times (7.9%).

Research Question 9: Is student suspension status related to actual end-of-year advancement?

Answer: Unable to reliably determine, given the small numbers of students involved (approximately 1.0% of the sample).

Research Question 10: Is student placement in an alternative education setting related to actual end-of-year advancement?

Answer: Unable to reliably determine, given the small numbers of students involved (approximately 3.0% of the sample).

Research Question 11: For students placed in an alternative setting, is the type of alternative setting related to actual end-of-year advancement?

Answer: No.

Among the three percent of the sample placed in some type of alternative setting, no differences in promotion rates were found for students by setting type.

Research Question 12: For students placed in an alternative setting, is the amount of time spent in an alternative setting related to actual end-of-year advancement?

Answer: No.

No differences in promotion rates were found by the amount of time spent in an alternative setting for the small number of students who were sent to such settings.

Research Question 13: Are teacher ratings of student mastery level of the essential elements directly related to actual end-of-year advancement?

Answer: Yes.

Students judged to have mastered half or more of the essential elements were much more likely to be promoted than students who were judged to have mastered fewer than half of the essential elements. Across the four core subject areas (language arts, mathematics, science, and social studies), from 89.5 to 94.8 percent of students actually *promoted* had been rated as having mastered half or more of the essential elements. Conversely, from 29.9 to 53.2 percent of students *retained* in first grade had been rated as having mastered *half or more* of the essential elements.

District type. Of students promoted, the highest percentages of students judged by their teachers to have mastered half or more of the essential elements were reported by *other central city suburban* districts, ranging from 94.7 to 97.9 percent across the four subject areas. The highest percentages of students judged by their teachers to have mastered fewer than half of the essential elements were reported by *major urban* districts, ranging from 8.9 to 17.3 percent across subject areas.

1995 campus accountability rating. The highest percentages of promoted students judged to have mastered half or more essential elements were on campuses previously rated as *Exemplary* (95.1% to 98.9%). The highest percentages of promoted students judged to have mastered fewer than half of the essential elements were from *Low Performing* campuses (9.9% to 18.3%).

Research Question 14: Are teacher judgments of students' promotion status confirmed by students' actual end-of-year advancement?

Answer: Yes.

Nearly all students were promoted to Grade 2. More Grade 1 students actually were promoted to Grade 2 (93.4%) than their teachers believed should be promoted or placed (86.1%). More were promoted than expected (90.5% versus 78.4%), and fewer were placed than expected (2.9% versus 7.7%). The result was that about half as many Grade 1 students were retained in grade than teachers had projected (3.7% versus 7.3%).

District type. Of the eight types of districts, all had promotion rates (promoted or placed) of 94.1 percent or greater. Schools in *independent towns* had the highest overall promotion rate (98.7%). *Major urban* districts had the lowest rate (94.1%).

1995 campus accountability rating. Campuses that were rated as *Low Performing* in 1995-96 had the highest overall percentage of students who were promoted (96.8%). Campuses rated as *Acceptable* had the lowest percentage (94.8%).

Did promotion rates vary when schools were on different academic calendars?

The results of analyses comparing schools on year-round calendars (YRE schools) to regular calendars should be interpreted cautiously because only five of the 99 schools studied were year-round campuses. Across nearly all 14 research questions, there were no real differences between YRE and non-YRE campuses. For example, YRE schools promoted 96.4 percent of their first graders and non-YRE schools promoted 95 percent of them of them. However, YRE schools promoted more students (46.2%) who were rated as always showing self-help skills than did non-YRE schools (33.5%). YRE schools promoted higher percentages of students identified as at risk (39.9%) than did other schools (30.5%). A higher percentage of students who participated in bilingual programs was promoted in YRE schools as compared to other schools (24.6% versus 15.3%).

Research Question 15: What combinations of school attributes, instructional practices, and materials are most predictive of actual end-of-year advancement?

Answer: Seventeen of the 26 attributes, practices, and materials investigated were predictive of actual end-of-year advancement. See Table 3 for the list.

Up to this point, the direct relationships between individual measurements — such as the number of times students display appropriate classroom behaviors and end-of-year promotion status — have been discussed. Measurements can also be combined, and the relationships among these combinations gleaned for insights as to which combinations may best anticipate student promotion. How the measurements are combined to form the final set studied does not rule out the possibility that other, unmeasured characteristics are significantly related to student promotion. Furthermore, not all possible combinations from the existing data have to be included, because there likely is some overlap among them in explaining student promotion. As an example, although all 26 of the features listed in Table 2 were explored, being informed of about two-thirds of them would probably enable an "outsider" to correctly guess if a given first-grade student were to be promoted, without knowing any other particulars about the child's academic performance.

Some of the features listed in Table 2, such as district per-pupil expenditures, classroom pupil:teacher ratio, and campus turnover rate have received limited attention in this report. These were included in the analyses because they have been observed to be important in understanding student learning or achievement in other research (e.g., expenditures, Hanushek, 1994; classroom pupil:teacher ratio, TEA, 1997a; turnover

rates, TEA, 1997d). As models of relationships between context, input, and process factors, and student achievement continue to be built and refined — particularly as TAAS data become available for the 1995-96 sample cohort of first graders — factors like these three will be examined more closely.

The attributes, practices, and/or materials that were significantly related to promotion from Grade 1 to Grade 2 are summarized in Table 3. The higher the chi-square value for each attribute, the more strongly it is related to student promotion. Table 3 shows the importance of knowing about a school's environment and about a student's readiness to begin Grade 1, when anticipating student promotion to Grade 2. Linking the school environment and the student is the teacher's experience, which turned out to be the only teacher characteristic available that improved the odds of correctly guessing if a student were to be promoted — in the absence of other academic performance information about that student.

Table 3. Contexts, Inputs, and Processes Associated With First Graders' Promotion Into Grade 2

School Level	Chi-square
District type (urbanicity)	62.50 ***
YRE/non-YRE calendar	8.41 **
1995 campus accountability rating	10.13 *
District per-pupil expenditures	22.11 ***
Classroom pupil:teacher ratio	33.95 ***
Campus turnover rate	11.75 ***
Classroom Level	
Student frequency of use of learning centers	11.25 *
Use of enrichment activities	9.63 *
Teacher use of varying modalities in instruction	19.68 ***
Frequency of student "pullouts"	31.79 ***
Teacher Level	
Years of experience	8.21 **
Student Level	
Readiness to begin first grade	205.73 ***
Limited English proficiency	6.90 **
Identified as at risk	11.18 ***
Overall social behavior	5.44 *
Attendance rate	25.15 ***
Educational self-help skills	54.00 ***

* Statistical significance at $p < .05$ *** Statistical significance at $p < .001$
** Statistical significance at $p < .01$

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These are the features that would help someone correctly anticipate whether or not a given first grader will be promoted into Grade 2 (statistically significant at $p < .001$ level, per Table 3):

- his/her readiness for first grade;
- the type of district his/her school is in;
- the child's academic self-help skills;
- his/her attendance during first grade;
- the classroom pupil:teacher ratio;
- the frequency with which students are "pulled out" for special programs instruction;
- district per-pupil expenditures;
- campus turnover rates;
- teacher use of various modalities in instruction; and,
- whether the child is in some way identified as at risk.

It is also important to know about those features of Grade 1 that did *not* relate to promotion in this research. The length of teacher planning periods, and the percentage of students who were economically disadvantaged on the campus were *not* significantly related to promotion to Grade 2. Neither were having enough instructional materials, nor teacher versatility in the use of reading instruction tools and methods. [Here, too, some features of schooling were analyzed for purposes tied to the broader SER/STEPS projects, and are not discussed in any detail in this text.] At the individual *student* level, knowing about the following educational practices did *not* improve the ability to anticipate a student's promotion to Grade 2, when the other factors were kept equal:

- prior participation in ECE or PreK programs;
- identification as economically disadvantaged;
- receiving bilingual, ESL, gifted and talented, or special education services;
- frequency of disciplinary actions; or,
- referral to an alternative education setting.

Because most of the measures used (other than actual advancement status and student attendance rates) were based on teacher judgments and perceptions, any conclusions about the significance of these relationships or lack thereof should be considered tentative. A measurable link between actual end-of-year advancement and student performance, external to teacher perception or judgment, needs to be established before conclusions can be made. This will be established in the 1997-98 Grade 3 study, when the students from Grade 1 in 1995-96 will be followed into Grade 3. Examination of students' third-grade TAAS scores will clarify the links between contexts, inputs, and processes, and academic results such as promotion and student performance. Additionally, the Grade 3 study allows for longitudinal examination of the effects of these measures, which will provide a better understanding of their cumulative impact.

DISCUSSION OF FINDINGS

As much as possible, this discussion is organized into how different contexts (e.g., district type), inputs (e.g., years of teaching experience), and processes (e.g., student self-help skills) in this study related to actual student promotion or placement into Grade 2. Table 2 on page 6 presents the complete list of features studied. The majority of factors examined in this study were the processes related to student characteristics or behaviors and instructional practices, because these processes are most amenable to change by educators. Furthermore, the relationships between certain features, like a child's socioeconomic status and his/her academic progress, are generally well established in existing research. In several cases, processes and inputs were affected by the contexts of district type, prior year campus accountability rating, and/or school calendar. The contributions of such measures as classroom pupil:teacher ratio, district per-pupil expenditure, and campus turnover rate, while displaying a significant influence on student promotion, are beyond the scope of this report to analyze. These factors should be examined in greater detail in the SER/ Grade 3 study to be conducted in 1997-98.

Contexts

District type (urbanicity). Instances where the highest percentages of students with key designators — for example, economically disadvantaged, at risk, LEP, or former PreK participant — are being promoted in *major urban* districts likely reflects the relative concentration of these children in *major urban* districts.

1995 campus accountability rating. Regardless of campus rating, at least 95 percent of all students in the sample were promoted to or placed in Grade 2. Districts rated as *Low Performing* had the highest promotion rates while districts rated as *Acceptable* had the lowest. Schools rated *Recognized* and *Exemplary* promoted the highest percentages of students who were perceived by their teachers as ready to learn, mastering half or more of the essential elements, performing at or above grade level, and always showing self-help skills. Schools rated as either *Acceptable* or *Low Performing* reversed the patterns of the *Recognized* and *Exemplary* schools, having promoted the highest percentages of students who were seen as *not* ready to learn, mastering *fewer* than half of the essential elements, and so forth. This raises questions about a number of critical issues, including (but perhaps not limited to): teacher expectations, especially in light of comparable improvement criteria in the accountability system that will be applied beginning with the 1998 ratings (1995 ratings were employed in this study); social promotion and/or content of local promotion/retention policies; and the effectiveness of practices in identifying and addressing needs of learners in primary grade classrooms.

Exemplary and *Recognized* campuses promoted the highest percentages of students who were *not* identified as LEP, economically disadvantaged, or at-risk, and the highest percentages of students *not* served by the special education, bilingual, or ESL programs. The converse was true for *Acceptable* and *Low-Performing* campuses — they promoted higher percentages of students with these characteristics and/or receiving these services. Again, these differences may reflect the higher percentages of identified or participating students attending campuses with one rating rather than another. That is, the higher-rated campuses enroll fewer students identified as at risk or receiving ESL instruction.

Year-round education (YRE). Overall YRE schools (based on the five-school sample) demonstrated no clear differences from regular-calendar schools.[1] YRE schools included in this study had a slightly better promotion rate to Grade 2 (+1.4%) than regular-calendar schools. Nearly one out of every two LEP students was promoted at the five YRE schools. This is a higher rate than would be expected, given that only about one in five YRE students is identified as LEP. Similarly, nearly 25 percent of the students participating in bilingual programs at the YRE schools were promoted to Grade 2, though only 15 percent of the YRE students were participating in bilingual programs. Thirty-one percent of year-round school students were identified as academically at risk, but nearly 40 percent were promoted at YRE schools. This was higher than the promotion rate for at-risk students at regular-calendar schools (31%).

Inputs

When students were identified as being economically disadvantaged, at risk, or limited English proficient, they were slightly less likely to be promoted than other students. Across types of districts, *major urban* districts promoted the highest percentages of students who were identified as economically disadvantaged, at risk, or LEP. As noted earlier, this difference likely reflects the higher percentages of these students in *major urban* districts relative to other types of districts. YRE schools promoted higher percentages of students who were economically disadvantaged or at-risk. Finally, there was no clear relationship between the percentage of students promoted and the percentage of economically disadvantaged students on each student's campus.

Processes

Grade 1 teachers in this study were able to provide valuable information about their students in a number of ways. The teachers' judgments concerning their students' promotion to Grade 2 were confirmed by the students' actual end-of-year promotion. In fact, *more* of their students were actually promoted and *fewer* were retained than they believed should be the case when surveyed in April 1995. This variation may

[1] Because of low numbers of students in some categories at YRE schools (such as students who were suspended, or served in an ESL program), comparisons with other schools were not made.

reflect the involvement of other school staff (primarily the principal) and parents in the final promotion/retention decisions, and/or the existence of retention reduction programs in summer 1995, among other possibilities.

Student academic characteristics. Teacher perceptions of student readiness for school at the beginning of Grade 1 proved to be related to end-of-year advancement to Grade 2, as well. Most students who were promoted had been considered by their teachers to be ready for school. Nearly all students who were retained had been considered by their teachers *not* to be ready for school.

Teacher assessments of the instructional levels of their students in reading and mathematics were related to actual end-of-year advancement. Students considered to be performing at or above grade level were *much more likely* to be promoted than students considered to be performing below grade level.

Teacher ratings of student mastery of the essential elements in the core subject areas (language arts, mathematics, science, and social studies) were related to the actual promotion of their students. When students were judged by their teachers to have mastered half or more of the essential elements, they were *much more likely to be promoted.* Conversely, students judged to have mastered fewer than half of the essential elements were *much more likely to be retained in Grade 1.*

These elements obviously affect each other. Students perceived as ready to begin school, working on grade level in reading and mathematics, and mastering the essential elements were substantially more likely to be promoted to Grade 2.

Student social characteristics. In the sample studied, students who had better attendance rates were more likely to be promoted than students with poorer attendance rates, when other factors were taken into account. This relationship was stronger in *major urban* and *central city suburban* districts. In the SER/Grade 1 study (TEA, 1997a), higher student attendance was related to students being judged by their teachers as making more overall progress in school and as having higher mastery levels of the essential elements.

Teacher ratings of student self-help skills were related to student promotion. In fact, students described by their teachers as most often exhibiting self-help skills were most likely to be promoted to Grade 2. Students described as least often using self-help skills also were the least likely to be promoted.

The frequency of disciplinary referrals did not keep most students from being promoted to the next grade. Ninety percent of the students who were referred outside the classroom for disciplinary action were promoted to Grade 2, while 96 percent of the non-referred students were promoted. In fact, 89 percent of the students who were sent to an alternative setting were promoted to Grade 2, though most of these students spent less than one day in an alternative setting.

Though based on a small number of students, it is noteworthy that the highest percentage of students referred for disciplinary action four or more times by April

1995 was in *non-metropolitan fast growing* districts. Perhaps more disruptive behavior is fostered by the instability associated with rapid growth and frequent change in an environment. This may be particularly acute for Grade 1 students, since the structure of the school day is already quite a change for them.

Student program participation characteristics. There were no significant differences in promotion rates for participants and non-participants in Early Childhood Education (ECE) or Prekindergarten (PreK). This finding is consistent with the large body of research (TEA, 1997b) that early childhood programs can significantly improve disadvantaged students' later success in school. In *major urban* districts, and on campuses rated as *Low Performing* in 1995, students who had attended PreK enjoyed relatively higher promotion rates. In *major urban* districts, this difference may reflect the higher percentages of former PreK students attending schools in these districts (35% of all former PreK students in the sample attended school in a *major urban* district).

Students who received special education, bilingual, or ESL program services were slightly less likely to be promoted than non-participating students. Across types of districts, *major urban* districts promoted the highest percentage of students in bilingual programs. This difference may reflect the higher concentrations of these students in *major urban* districts, as compared to other types of districts, and/or relate to the effectiveness of programs offered.

Combined Contexts, Inputs, and Processes

By looking at the features in combination as they relate to promotion, the part each plays becomes better defined. Based on these data, the school environment, both at the school and classroom level, appears to play a large part in student promotion for primary grade level students. Another way to describe these findings is in terms of computed odds ratios (see Appendix A for a more complete explanation). By computing odds ratios on each feature (where possible), inferences can be drawn about a given student's chances of promotion by comparing his or her group's results to results for a reference group, while keeping other things equal. Table A-2 in Appendix A contains the complete information for these comparisons. For example, district type was found to matter in student promotion rates. Students in metropolitan schools were only 10-14 percent as likely as those in rural schools to be advanced when other factors were taken into account. Students in non-metropolitan schools were 20-23 percent as likely to advance as students in rural schools, other things being equal. Students in independent towns were only 10 percent *less* likely to advance as students in rural districts.

Campus accountability ratings from 1995 tended to be inversely related to the odds of student promotion to the second grade, when other factors were taken into account. That is, the better the accountability rating, the *less* likely that students would be promoted. Schools rated *Exemplary* were about half as likely to advance students to Grade 2 as *Acceptable* schools; whereas students who attended *Low Performing* campuses were almost two and a half times more likely to be promoted as students who attended *Acceptable* campuses, when other considerations were taken into

account. Also, students at the five YRE campuses were almost four and a half times more likely to be promoted to Grade 2 than were students attending the regular-calendar schools. Results such as these typically raise more questions than they answer, and so they continue to be subject to further research.

Per the student mobility research conducted by TEA this past year (TEA, 1997d), campus turnover rates were associated with student promotion to Grade 2. The consistency with which higher mobility is associated with poorer learning (in terms of promotion rates, Texas Assessment of Academic Skills passing rates, etc.) means that it should continue to be examined in future studies of the "context — input — process" genre. It also validates the use of mobility factors in the state's accountability system, through use of October subset data and the comparable improvement groups.

In addition to contextual school or classroom characteristics (such as district type, campus rating, school calendar, and classroom pupil:teacher ratio), other school-related processes appear to affect the likelihood of student promotion. However, the findings do not lend themselves to any simple interpretations. For example, in classes where students are pulled out of class once, twice, or four times a day, the odds of these students being promoted to Grade 2 were lower than the odds for students in classes where there were no pullouts (when other factors were taken into account). Counterintuitively, in classes where there were three pullouts per day, students were about equally as likely to be promoted; in classes where there were five or more pullouts per day, students were almost three and a half times *more* likely to be promoted than students in classes without pullouts.

A second image, dominated by the processes in this study, emerged regarding the importance of the ***student as participant*** to the learning experience. The strongest association to student promotion was student readiness to begin first grade. Students who were judged by their teachers to be ready for first grade at the beginning of school were over 12 times more likely to be promoted than students who were judged to *not* be ready to begin school (when other factors were taken into account). Other important considerations were student attendance rate (consistent with the preliminary Grade 1 findings), overall student social behaviors, and student self-help skills. Students who were rated by their teachers as always demonstrating adequate self-help skills were nine times more likely to be promoted than students who never demonstrated adequate self-help skills. In general, students who "always," "often," or "sometimes" demonstrated self-help skills fared significantly better in their promotion rates than did students who "seldom" or "never" displayed such skills. The results suggest that students who take a more active role in their learning experiences are more likely to advance successfully. Factors that affect the student's confidence, willingness, ability, or opportunity to participate *may* also affect promotion probabilities; for example, student ethnicity was related to readiness, such that disproportionately more White students and fewer Hispanic students were seen as ready to learn at the start of the school year. The commonly observed confounding of being an ethnic minority and being economically disadvantaged also likely explains some of the findings about readiness.

Student status as identified at risk or limited English proficient was also related to student promotion. Students identified as LEP were 50 percent more likely than non-LEP peers to be promoted. With other factors taken into account, students identified as at risk were about half as likely to be promoted as their non-at-risk peers. This raises questions about whether risk factors are better articulated at the primary grades than they are at secondary grades, since past research has shown the "at risk" indicator to function poorly as a predictor of dropping out.

Finally, one possible bridge between the school and student factors is teacher experience, the single teacher attribute that was related to first graders' promotion to Grade 2. Teacher versatility (measured by teachers' reported frequency of use of phonemic awareness instruction, whole-class instruction, non-interrupted reading time for students, and amount of time students read aloud) did ***not*** appear to be significantly related to student promotion. Other teacher practices, such as frequency of use of varying teaching modalities to match student learning styles and enrichment activities, did relate to student promotion. Students whose teachers said they used enrichment activities generally were two to over three times more likely to be promoted than students whose teachers never used enrichment activities. Interestingly, promotion rates were highest for those students whose teachers said they used enrichment activities very infrequently — monthly or less often. This same overall pattern occurred for use of different teaching modalities: students were much more likely to be promoted if their teachers used different modalities than if their teachers did not, but those students whose teachers used different modalities monthly or less often were over five and a half times more likely to be promoted than students whose teachers never used different modalities.

These patterns should be interpreted cautiously because using or not using a certain practice or technique will not, in and of itself, guarantee success, and the data are based on teacher self-reports. Frequency of use of various practices is expected to be effective when teachers match their use carefully with each student's individual instructional needs. As noted previously, students who had more experienced teachers were more likely to be promoted. This *may* coincide with earlier research findings that more experienced teachers are more successful in matching their instructional practices to each student's needs, than those teachers with little or no experience (e.g., Darling-Hammond, 1984).

Such curious patterns of findings again lead to a host of questions, ranging from whether limitations of the data collection instrument are directly responsible for the results, to whether only occasional use of some teaching strategies is indeed most effective for learning. Issues such as these are best left for the Grade 3 follow-up study, or other future research efforts. A measurable link between actual end-of-year advancement and student performance, external to teacher perception or judgment, needs to be established before conclusions can be reached. In the Grade 3 study, not only will these teacher self-reported measures of instructional practices be examined, but students' third-grade TAAS scores should clarify the links between promotion and actual student performance. Additionally, the Grade 3 study allows for longitudinal examination of the measures, which will provide a better understanding of their interrelationships and cumulative impact.

INTERIM CONCLUSIONS

Contexts

Further study is needed to better understand local variations in how promotion and retention decisions are made, what factors are considered, and who is involved. The apparent success of the small sample of year-round schools in this study to advance bilingual, LEP, or at-risk students warrants further investigation, as well. Because these students are often more concentrated in *major urban* districts, district type will have to be considered in any future research on progress in primary grades. Other contextual factors that also need further study, in relation to student promotion, are student mobility and campus turnover rate.

Inputs

Because students who have been identified as economically disadvantaged, at risk, and/or limited English proficient are slightly less likely to advance to the next grade level, more longitudinal studies need to identify which programs (i.e., bilingual, ESL, and Title I), practices, etc., are effective in helping these students to be more successful in school, and to advance at the same rate as other students. Some schools and/or districts may be more effective in the programs they offer, or may do a better job of matching students with services that best meet their needs. This, for example, may underlie the preliminary but optimistic results of the few year-round schools in the study. The district per-pupil expenditure is another factor that warrants further research in terms of its relationship to other key context, input, and/or process measures that affect promotion rates.

Processes

The perceptions of Grade 1 teachers concerning their students are extremely valuable. These teacher perceptions are useful in terms of a) informally assessing and measuring their students' readiness, learning-related behaviors, and academic progress during the school year (especially given the absence of any formal assessment appropriate to this grade); b) identifying their students' needs for alternative instructional strategies and/or additional help; and c) making informed and conservative predictions regarding their students' probable end-of-year advancement status. It is recommended that the perceptions of first-grade teachers be utilized in any decisions concerning their students. Additional reading diagnostic data will be available to first-grade teachers for decision-making in 1998-99 when changes go into effect (TEC §28.006) that require districts to administer a reading diagnostic instrument from the commissioner-adopted or district-adopted list to all students in Kindergarten and Grades 1 and 2. Early childhood education should be a focus of

ongoing inservice training for all teachers of the primary grades, so that all educators working with young children may be informed and knowledgeable about the needs of their students — and most important, of how to respond to those needs.

The finding of this study about the positive effects of students' participation in Prekindergarten on their promotion rates echoes an earlier TEA longitudinal study on former Prekindergarten students (TEA, 1995b), as well as national research (TEA, 1997b). Students who attended Prekindergarten programs continue to benefit from these programs as they progress through school. There is less research available on the effects of participation in Early Childhood Education. Participation in Prekindergarten or Early Childhood Education may well affect other areas related to school success, such as self-help skills and mastery levels. Students who participated in these programs should continue to be followed to assess their school success in a variety of other areas, such as discipline, attendance, grades, and dropping out, in addition to achievement test scores.

Better school attendance was related to promotion to Grade 2. Because school attendance can be considered a crude proxy for students' opportunity to learn, it is important to continue to follow students' attendance rates into Grade 3. This would allow examination of the effects of attendance on promotion to the next grade level and on students' TAAS scores. It would also determine if attendance patterns are consistent from year to year. Poor school attendance at the secondary level (TEA, 1996b) is a factor related to students' dropping out. If students with consistently poor attendance rates are identified *early* in their elementary schooling, then more resources could be directed towards improving their attendance rates and thus increasing their opportunities to learn (perhaps ultimately lessening their chances of dropping out). For all these reasons, attendance should continue to be used as a base indicator in the state's accountability system.

The Grade 2 promotion rate for students who were referred outside the classroom for disciplinary problems was not significantly different from students who were not. It is recommended that longitudinal research be conducted on students who were referred for disciplinary action multiple times in the primary grades. This could identify any long-term impacts on academic performance or promotion across grade levels.

Combined Contexts, Inputs, and Processes

A number of school attributes and school or classroom practices appear to play mediating roles in students' promotion (see Table 3). The relationship of individual attributes or practices to student promotion is lessened when the relationships of other practices to student promotion are considered at the same time. Consideration of the mediating role of these specific school characteristics should be expanded when the Grade 3 follow-up study is conducted.

Teacher perception of student readiness to begin Grade 1 was a strong predictor of promotion to Grade 2, when other factors were kept equal. This may emphasize the

importance of early teacher input regarding the needs of individual students. More detailed examination should be pursued regarding the relationships among participation in early childhood programs, readiness to learn, and later grade level promotion.

Beyond the observed simple, positive relationships among student self-help skills, overall social behavior, attendance rate, and likelihood of promotion to Grade 2, these student behaviors helped explain actual student promotion to the second grade. In other words, having information about student self-help skills, overall social behavior, and attendance rate would help one gauge whether or not a given child would be promoted on time to Grade 2. These three behaviors and readiness to learn would appear to relate to students' opportunities to learn: they must be in class; their social behaviors must permit academic engagement; and their self-help skills and academic readiness are pivotal to more extended forms of engagement.

As noted previously, student identification as LEP or at risk did relate to the end-of-year advancement of first graders, while other student attributes did not. It would be interesting to determine whether other student attributes would demonstrate stronger effects if student behaviors tied to opportunities to learn were removed from the model.

Additionally, the frequencies of pullouts from class, use of learning centers, and use of varying teaching modalities to match student learning styles were strongly associated with promotion, with enrichment activities also associated with promotion, but to a lesser degree. The association between having sufficient instructional materials and promotion was marginally significant. These findings are consistent with the findings of the SER/Grade 1 study (TEA, 1997a), in that fewer student pullouts for special program instruction, more frequent use of learning centers, more frequent use of different teaching modalities to match students' learning styles, sufficient instructional materials, and more frequent use of enrichment activities were associated with higher mastery of the essential elements and greater likelihood of promotion to Grade 2 (as perceived by teachers).

This report is an interim investigation of the actual outcomes of student promotion from Grade 1 to Grade 2. The research was conducted because the SER/Grade 1 study was necessarily limited to how teachers' perceptions of student performance related to anticipated student promotion to the next grade level. An in-depth study of these students will commence in the 1997-98 school year, as these students are expected to be in the third grade and taking the TAAS tests for the first time. The results of the present study help to highlight those contexts, inputs, and processes that warrant further exploration in Grade 3. The Grade 3 study is an essential step in this research because it adds a performance measurement link to student advancement through the primary grades. Successive years of promotion/retention data, combined with an examination of TAAS data, should confirm by 1998-99 those combinations of individual level, classroom level, and school/district level features associated with optimal learning in Texas primary grades.

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APPENDIX A.

TECHNICAL DESCRIPTION
OF
DATA ANALYSES

APPENDIX A.
Technical Description of Data Analyses

The data analyses performed to answer the research questions are listed in Table A-1. The findings of the Grade 1 study, which were based on teacher perceptions, were compared with actual student end-of-year advancement (promotion or placement into Grade 2). Since the dependent variable (actual end-of-year advancement) and most of the independent variables are represented by categorical data, values of survey-related variables were crosstabulated with values of actual end-of-year advancement to identify patterns and relationships. For the two continuous variables investigated (attendance rate and percentage of students on campus who were economically disadvantaged), point biserial correlations with promotion status were conducted. Finally, a logistic regression was conducted to determine which combinations of school attributes and practices best statistically predicted student promotion (when a categorical dependent variable is being examined with a mix of categorical and continuous independent variables, a logistic regression analysis is the appropriate technique to explore the multivariate relationships; SAS Institute, 1996.)

While the regression analyses in the SER/Grade 1 study were based on specific models (model testing to predict overall progress or student mastery), the approach to regression analyses in this study was notably heuristic (model *building*). The analyses were deliberately exploratory in nature to provide a basis for more focused considerations in the Grade 3 study.

One aim of the regression analyses was to identify school attributes and practices that affected actual student promotion. It was recognized however, that certain program-related student inputs — while not school attributes in a strict sense — also could relate to student performance (e.g., student participation in Early Childhood Education or Prekindergarten). Accordingly, a regression model was constructed to address the fuller picture. Among those variables was a composite index called "teacher versatility," constructed to represent the frequency with which Grade 1 teachers reported using various approaches to reading instruction (phonemic reading, whole-class instruction, non-interrupted reading time for students, and reading aloud). Individual frequencies were rated on scale of 1 to 5, resulting in a possible range of values for the index of 4 to 20. Variables available for selection in the unconstrained model are presented in Table 2 (see page 6).

In logistic regression, the maximum likelihood is computed so that a response (dependent) variable is identified properly as one value rather than another (in this case, promotion versus retention). To determine how much a given variable contributes to the goodness of fit of a particular model, the likelihood ratio of a full model containing the variable in question is compared to the likelihood ratio of a reduced model without that variable. The result of such comparisons produces the equivalent

of a chi-square value with one degree of freedom, which can be gauged against standard statistical tables to assess the level of significance for the impact of the variable on the model's effectiveness. The impact of each variable in the full model can be assessed in this way.

Data Coding

The dependent variable, actual student end-of-year advancement to Grade 2, had the values "1" to represent the student's having been promoted and "2" for not having been promoted.

Promotion categories in the fall 1996 PEIMS data submissions that either accounted for very few students (2.9%) or were of indeterminate effect, such as "status pending summer evaluation" and "student left district," were omitted from the analyses. The remaining possibilities were collapsed into only two categories, to indicate that a student was advanced (promotion and placement) or was not advanced to Grade 2 (i.e., was retained in Grade 1). Grade level performance as measured by teacher perceptions in the areas of reading proficiency, reading comprehension, and mathematics, were recoded from three to two categories: "at/above" grade level, and "below" grade level. Similarly, teacher perceptions of student mastery of the essential elements for the core subject areas of language arts, mathematics, science, and social studies were categorized as mastery of "half or more" and "less than half" of the essential elements.

Odds Ratio Discussion

Among the predictor variables in the logistic regression model were a number of categorical variables. Calculation of odds ratios permit inferences to be drawn about the odds of student promotion given observed values of the predictor variable relative to a predetermined reference group's value on that same variable. The odds ratio is calculated by raising the natural logarithm *e* to a power defined by the estimate for the category value in question.

For example, the predictor variable of 1995 campus accountability rating had four categories. Those categories, their estimates (from the regression analysis), and the calculated odds ratios are presented below:

Category	Estimate	Odds Ratio
Exemplary	–0.664	0.51 (*e* to the -0.664 power)
Recognized	–0.109	0.90
Acceptable (reference group)	0.000	1.00
Low-performing	0.874	2.40

From this information, one can say that when a student attended a school previously rated as *Exemplary*, s/he was about half (0.51) as likely to advance to Grade 2 as a student who attended a school with an *Acceptable* rating, *after* accounting for other

known factors that were included in the regression model. Similarly, a student who attended a *Recognized* school was 90 percent as likely to advance to Grade 2 as a student from an *Acceptable* school, and a first grader from a *Low-Performing* school was almost 2 1/2 times more likely to advance to Grade 2 as a student from an *Acceptable* school (2.40). Odds ratios for other predictor variables are interpreted in like fashion; Table A-2 on page 37 summarizes the odds ratios and shaded lines are used to designate the reference group values within each variable.

Table A-1. Research Questions and Related Analyses

Research Questions*	Analysis
1. Is there a relationship between the percentage of economically disadvantaged students at the student's campus and actual first-grade student end-of-year advancement? **	Point Biserial Correlation
2. Is prior participation in early childhood programs (Prekindergarten, Early Childhood Education) positively related to actual end-of-year advancement?	Chi-Square
3. Are teacher perceptions of student readiness to learn directly related to actual end-of-year advancement?	Chi-Square
4. Are student attendance rates directly related to actual end-of-year advancement?	
5. Are teacher ratings of student self-help skills directly related to actual end-of-year advancement?	Chi-Square
6. Are teacher ratings of student instructional levels directly related to actual end-of-year advancement?	Chi-Square
7. Is student identification as economically disadvantaged, at risk, and/or limited English proficient (LEP), or participation in special education and/or bilingual or English as a second language (ESL) programs, related to actual end-of-year advancement?	Chi-Square
8. Is the number of times a student is referred for discipline related to actual end-of-year advancement?	Chi-Square
9. Is student suspension status related to actual end-of-year advancement?	Chi-Square
10. Is student placement in an alternative education setting related to actual end-of-year advancement?	Chi-Square
11. For students placed in an alternative setting, is the type of alternative setting related to actual end-of-year advancement?	Chi-Square
12. For students placed in an alternative setting, is the amount of time spent in an alternative setting related to actual end-of-year advancement?	Chi-Square
13. Are teacher ratings of student mastery level of essential elements directly related to actual end-of-year advancement?	Chi-Square
14. Are teacher judgments of students' promotion status confirmed by students' actual end-of-year advancement?	Chi-Square
15. What combinations of school attributes, instructional practices (such as frequency of "pullouts," teacher use of varying modalities in instruction, use of learning centers, etc.), and materials are most predictive of actual end-of-year advancement?	Logistic Regression

* For all 15 questions, the possible moderating influences of (a) district type, (b) 1995 campus accountability rating, and (c) academic calendar (year-round or not) were considered.

** The term "advancement" is used throughout this text to include both promotion and placement into Grade 2 following the students' first-grade year in school, per fall 1996 PEIMS data.

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Table A-2. Odds Ratio Summary Table [a]

Measure	Responses	Number	Estimate	Chi-Square	Probability	Odds Ratio
District Type (urbanicity)	Major Urban	1,793	-1.957	20.92	***	0.14
	Major Suburban	2,074	-2.291	27.35	***	0.10
	Other Central City	1,246	-2.232	25.43	***	0.11
	Other CC Suburban	643	-1.569	10.74	***	0.21
	Independent Town	534	-0.097	0.02		0.91
	Non-Metro, Fast Growing	256	-1.464	7.51	**	0.23
	Non-Metro, Stable	1,010	-1.632	13.71	***	0.20
	Rural [b]	527	0.000			1.00
School Calendar	Year-Round	439	1.497	6.40	*	4.47
	Not Year-Round	7,644	0.000			1.00
1995 Campus Accountability Rating	Exemplary	285	-0.664	2.70		0.51
	Recognized	1,985	-0.109	0.39		0.90
	Acceptable	5,312	0.000			1.00
	Low-Performing	501	0.874	6.37	*	2.40
Student Frequency of Use of Learning Center	Daily	3,348	0.304	1.71		1.36
	2-4 times/week	2,093	0.758	8.41	**	2.13
	Weekly	1,529	0.334	1.51		1.40
	Monthly	408	0.587	2.68		1.80
	Less Than Monthly	682	0.000			1.00
Frequency of Use of Enrichment Activities	Daily	2,697	1.160	5.59	*	3.19
	2-4 times/wk	3,471	0.798	2.73		2.22
	Weekly	1,654	1.033	4.50	*	2.81
	Monthly or Less	193	1.219	4.00	*	3.38
	Don't Use	62	0.000			1.00
Frequency of Use of Different Teaching Modalities	Daily	4,393	1.309	8.60	**	3.70
	2-4 times/week	2,225	0.847	3.63		2.33
	Weekly	965	1.364	8.27	**	3.91
	Monthly or Less	382	1.744	10.07	**	5.72
	Don't Use	112	0.000			1.00
Daily Frequency of Student "Pullouts"	Once	2,573	-0.510	2.25		0.60
	Twice	2,159	-0.352	1.25		0.70
	Three Times	977	0.058	0.03		1.06
	Four Times	609	-0.384	1.37		0.68
	Five or More Times	528	1.227	7.24	**	3.41
	Never	1,229	0.000			1.00
Readiness	Ready	5,335	2.520	152.01	***	12.43
	Not Ready	2,430	0.000			1.00
LEP Status	LEP	1,684	0.526	6.91	**	1.69
	Not LEP	6,145	0.000			1.00
At-Risk Status	At Risk	2,571	-0.585	11.50	***	0.56
	Not At Risk	5,441	0.000			1.00
Self-Help Skills	Always	2,541	2.206	26.69	***	9.08
	Often	2,388	1.326	15.68	***	3.77
	Sometimes	1,723	1.063	14.26	***	2.90
	Seldom	917	0.069	0.08		1.07
	Never	180	0.000			1.00

[a] Because several measures were continuous in nature (district per-pupil expenditures, classroom pupil teacher ratio, campus turnover rates, teacher years of experience, and attendance), odds ratios could not be prepared.

[b] Reference groups are designated by the shading on their lines in the table.

* statistical significance at $p < .05$; ** statistical significance at $p < .01$; *** statistical significance at $p < .001$.

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TITLE VI, CIVIL RIGHTS ACT OF 1964; THE MODIFIED COURT ORDER, CIVIL ACTION 5281, FEDERAL DISTRICT COURT, EASTERN DISTRICT OF TEXAS, TYLER DIVISION

Reviews of local education agencies pertaining to compliance with Title VI Civil Rights Act of 1964 and with specific requirements of the Modified Court Order, Civil Action No. 5281, Federal District Court, Eastern District of Texas, Tyler Division are conducted periodically by staff representatives of the Texas Education Agency. These reviews cover at least the following policies and practices:

(1) acceptance policies on student transfers from other school districts;

(2) operation of school bus routes or runs on a nonsegregated basis;

(3) nondiscrimination in extracurricular activities and the use of school facilities;

(4) nondiscriminatory practices in the hiring, assigning, promoting, paying, demoting, reassigning, or dismissing of faculty and staff members who work with children;

(5) enrollment and assignment of students without discrimination on the basis of race, color, or national origin;

(6) nondiscriminatory practices relating to the use of a student's first language; and

(7) evidence of published procedures for hearing complaints and grievances.

In addition to conducting reviews, the Texas Education Agency staff representatives check complaints of discrimination made by a citizen or citizens residing in a school district where it is alleged discriminatory practices have occurred or are occurring.

Where a violation of Title VI of the Civil Rights Act is found, the findings are reported to the Office for Civil Rights, U.S. Department of Education.

If there is a direct violation of the Court Order in Civil Action No. 5281 that cannot be cleared through negotiation, the sanctions required by the Court Order are applied.

TITLE VII, CIVIL RIGHTS ACT OF 1964 AS AMENDED BY THE EQUAL EMPLOYMENT OPPORTUNITY ACT OF 1972; EXECUTIVE ORDERS 11246 AND 11375; EQUAL PAY ACT OF 1964; TITLE IX, EDUCATION AMENDMENTS; REHABILITATION ACT OF 1973 AS AMENDED; 1974 AMENDMENTS TO THE WAGE-HOUR LAW EXPANDING THE AGE DISCRIMINATION IN EMPLOYMENT ACT OF 1967; VIETNAM ERA VETERANS READJUSTMENT ASSISTANCE ACT OF 1972 AS AMENDED; IMMIGRATION REFORM AND CONTROL ACT OF 1986; AMERICANS WITH DISABILITIES ACT OF 1990; AND THE CIVIL RIGHTS ACT OF 1991.

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